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Vegetative reproduction in Selaginella.—Miss BANCROFT[16] has investigated the reproductive "tubers" of two species of *Selaginella* from India. In *S. chrysocaulos* there occur budlike structures at the tips of some of the vegetative branches; while in *S. chrysorrhizos* the stem apices forming the "buds" repeatedly fork, rhizophores often occurring in the fork between two branches. Miss BANCROFT investigated the behavior of both these reproductive structures, which differs in details, since in one of the species the "tubers" remain at the surface of the ground; while in the other they are developed underground, at the ends of filamentous vegetative branches.—J. M. C.

Anatomy of some xerophilous ferns.—MARSH[17] has made an anatomical study of certain xerophilous species of *Cheilanthes* and *Pellaea*, material having been obtained chiefly from the United States. Such well marked leaf "adaptations" as hairs or scales on the lower surface, inrolled margins, thick cuticle, and palisade parenchyma are described. The xylem features are discussed in detail, and one of the interesting conclusions is that "the petiolar structure, the stem anatomy, and the greater output of spores per sporangium, all point to *Cheilanthes Fendleri* as a near approximation to an ancestral type, from which *C. gracillima* and *C. lanuginosa* have been derived."—J. M. C.

Sphagnum bogs of Alaska.—RIGG[18] has noted the peculiarities of the flora of some Alaskan peat bogs and finds that while sphagnum occurs in many different habitats in Alaska, only where there is an absence of drainage do bogs accompany it. The peat in the bogs visited had a maximum depth of only 2.5 ft. Aside from the sphagnum, *Empetrum nigrum* is the most abundant and uniform in its occurrence, but *Ledum palustre*, *Kalmia glauca*, *Oxycoccus oxycoccus*, and *Drosea rotundifolia* are among other characteristic species. The bogs occur surrounded by treeless areas, by tundras, or by coniferous forests, and vary much in area.—GEO. D. FULLER.

Ecological aspects of Paleozoic vegetation.—DACHNOWSKI[19] has given an account of the probable vegetational features and ecological conditions of Ohio from Ordovician through Pennsylvanian time. The most important part of this paper is the discussion relative to the prevailing xeromorphy of Paleozoic land plants. It has long been known that most of these xeromorphic

[16] BANCROFT, N., Note on vegetative reproduction in some Indian selaginellas. Ann. Botany **28**:685–693. *pl. 49. figs. 7.* 1914.

[17] MARSH, A. S., The anatomy of some xerophilous species of *Cheilanthes* and *Pellaea*. Ann. Botany **28**:671–684. *figs. 11.* 1914.

[18] RIGG, G. B., Notes on the flora of some Alaskan sphagnum bogs. Plant World **17**:176–183. 1914.

[19] DACHNOWSKI, A., The ancient vegetation of Ohio and its ecological conditions for growth. Ohio Naturalist **11**:312–331. 1911; Amer. Jour. Sci. **32**:33–39. 1911.

plants were inhabitants of swamps, and it is the author's belief that the toxic theory, which he has done so much to develop, explains these ancient xerophytic structures as well as it does the xerophytic structures of modern bog plants.—H. C. COWLES.

Seedling anatomy.—Miss THOMAS[20] has added a large body of facts to our knowledge of seedling anatomy, having investigated 150 species belonging to Ranales, Rhoeadales, and Rosales, about half of them belonging to Ranales. She has reached some interesting conclusions as to the phylogenetic relations of the various anatomical conditions, and is inclined to believe that seedling anatomy may be of service in indicating relationships, in spite of the recent tendency to discount it. It would be of interest if Miss THOMAS should "summarize or analyze" the results obtained thus far, and give us a profitable perspective.—J. M. C.

Scinaia.—SETCHELL[21] has studied the species of red algae which have usually passed for *Scinaia*. As a result he has broken up what seems to be a plexus of forms. After a description of the morphology of the group, the taxonomic presentation includes *Scinaia*, with 11 species, 5 of which are new; *Gloiophloea*, with 7 species, 4 of which are new; and *Pseudoscinaia*, a new genus with two species. The discussion of geographical distribution of this group of forms is particularly suggestive, a subject to which the author has been giving much attention.—J. M. C.

Mutation in Egyptian cotton.—KEARNEY[22] has contributed to the literature of mutation by describing the behavior of Egyptian cotton, which exhibits the tendency characterizing *Oenothera Lamarckiana*, new characters appearing at different times and in different places. The origin of this cotton is obscure, but it seems certain that the varieties now grown are of mixed ancestry. If this be true, it would confirm the view that the tendency to produce mutants is a result of remote or complex hybridization.—J. M. C.

Elementary species of Onagra.—BARTLETT[23] has published 12 new elementary species of the subgenus *Onagra*, 5 of them belonging to the aggregate called *O. biennis* in our manuals, 2 of them being allies of *O. parviflora*, and the remaining 5 being included in the recent descriptions of *O. muricata*, which in

[20] THOMAS, E. N., Seedling anatomy of Ranales, Rhoeadales, and Rosales. Ann. Botany **28**:695–733. *pls. 50, 51. figs. 43.* 1914.

[21] SETCHELL, W. A., The *Scinaia* assemblage. Univ. Calif. Publ. Bot. **6**:79–152. *pls. 10–16.* 1914.

[22] KEARNEY, THOMAS H., Mutation in Egyptian cotton. Jour. Agric. Research **2**:287–302. *pls. 17–25.* 1914.

[23] BARTLETT, H. H., Twelve elementary species of *Onagra*. Cybele Columbiana **1**:37–56. *pls. 1–5.* 1914.